

Abstract

A self-healing liquid contact switch and methods for producing such devices are disclosed. An illustrative self-healing liquid contact switch can include an upper actuating surface and a lower actuating surface each having a number of liquid contact regions thereon configured to wet with a liquid metal. The upper and lower actuating surfaces can be brought together electrostatically by an upper and lower actuating electrode. During operation, the liquid metal can be configured to automatically rearrange during each actuating cycle to permit the switch to self-heal.